DTCD Newsletter

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# Top-rated computing project in Myanmar

A complex, large-scale project which is introducing appropriate, high informatics technology into Myanmar has received high scores by a recent tripartite in-depth evaluation.

Fielded by the Government of Myanmar, UNDP and UNDTCD, the evaluation mission compared the Computing Development Project favourably in many respects with the utilization of information technology in developed country settings. It also concluded that the project, designed to build up the computing and statistical infrastructure of the national planning process, has an implementation rate of 90-95 per cent, despite the fact that it was carried out "in an environment characterized by multiple constraints."

Running from 1984 to the end of 1990, the project has set up a mainframe computing center in the Central Statistical Office (CSO) which, in both technological and human resources terms, is now positioned to meet the information management needs of a cross section of government departments for many years to come.

[See **Myanmar** on page 6]

Also in this issue:

2 Aid co-ordination
3 Africa: women geologists
4 LDCs: management
5 Ground water: software
6 Algeria: high-tech help
7 China: cleaner air
8 New publications
Workshops and seminars

best copy available

# Rural infrastructure for Malawi

Bridge being erected across the South Rukuru River in the Rumphi District

In recent years the Government of Malawi and the rural population have been working hand in hand to build up rural health and education services. Through self-help schemes, rural villagers have constructed health clinics, houses for health personnel and teachers and rural water supply systems. The access of many communities to these services has been hampered, however, by the lack of roads and bridges. Access to local markets where rural families can sell surplus produce and earn extra income has also been impeded. In some cases this has occurred in the wet season (November to March) alone, but the lack of bridges across perennial rivers has also been a problem.

In late 1989 a three-year project got underway with technical co-operation from UNDTCD (Infrastructure Branch) and funding from UNDP to help the Ministry of Works and Supplies backstop rural villagers in their efforts to construct 35 access roads (a total of 381 kilometres) and 177 bridges through self-help.

The self-help activities under this project are requested by villagers, approved by District Development Committees and provided with the required engineering and design expertise and other support for construction by Village Access Roads and Bridges Assistance Units(VARBU). Village Action Committees are then set up for each sub-project to organize the self-help needed for construction and later for maintenance. By the conclusion of this project, in mid-November 1991, 140 such committees will have been formed.

To ensure the sustainability of this community-based development effort, the project is producing standard design-packages of road and bridge structures and specific designs for each site based on surveys by the VARBUs. It is also producing manuals on the surveying, design, engineering and construction techniques required by these projects.

# Towards self-reliance in aid co-ordination

In recent years UNDTCD has been taking a leading role in helping developing countries upgrade their capacities in the field of aid co-ordination. Currently, UNDTCD (through its Development Planning Advisory Branch), is assisting 23 countries to become self-reliant in co-ordinating the closely related areas of technical and financial co-operation.

As part of the United Nations Secretariat, UNDTCD works within the framework of absolute political neutrality, a key asset in this crucial and politically sensitive field.

### Support for Africa

In the past two years, nearly half of this work has been in Africa, the region with the largest number of Least Developed Countries. Since external resources constitute a large share of the total resources available to these countries, aid co-ordination takes on special importance.

Assistance has been provided through both resident and short-term international expertise. In order to promote self-reliance, formal and on-the-job training has been a component of all projects, and in a few countries institutional structures for aid co-ordination have been upgraded.

Projects in Benin, Burkina Faso, Congo and Guinea-Bissau were devoted entirely to aid co-ordination, while in other countries aid co-ordination activities were part of projects providing support in a broad range of planning fields.

### Preparing for negotiations

An important area of support has been to preparations for international negotiations on financial assistance, including donors' round tables. Assistance to Guinea-Bissau included support for the National Technical Co-operation Assessment and Programme (Natcap), while in Ghana UNDTCD staff led an inter-agency mission which formulated and appraised a package of projects aimed at mitigating the social costs of structural adjustment.

In many cases there was a relation between aid co-ordination activities and overall planning. In Zimbabwe, for example, a project assisted in programming the external financial resource requirements for a national medium-term plan.

### Computerized systems

Projects in the Asia and Pacific region have tended to be smaller than in Africa, with the exception of a large-scale project in Bangladesh devoted entirely to aid co-ordination. The focus has been on computerized information systems for monitoring and managing external assistance and preparations for donors' round tables.

In the Americas, computerized information systems were established in British Virgin Islands, Costa Rica, Mexico, Nicaragua, Panama and Venezuela, while support for aid negotiations was provided to the Netherlands Antilles and Nicaragua. Institutional structures and procedures in this field were upgraded in Costa Rica, Mexico and Venezuela.

A number of interregional workshops have complemented the work carried out through projects and headquarters-based advisory services.

## Coming on line: public sector planning information system

With financing from the United Nations regular budget, UNDTCD is engaged in an ambitious operational research project aimed at developing a new tool to integrate development planning with economic management.

The Public Sector Planning and Management Information System (PSPMIS) will facilitate the flow of key information between decision-makers in the planning, finance and sectoral ministries of developing countries, and as a result, strengthen linkages between the planning process, economic management and budgetting. The PSPMIS will differ from previous computer-based systems in its broader scope, stronger macro-economic framework and greater degree of integration.

The PSPMIS will integrate into a single, internally consistent data bank the data requirements of the main planning functions: the macroeconomic framework for the public investment plan; project preparation and investment planning; the link between planning and budgeting for development and recurrent expenditures; aid co-ordination and external debt management.

The system is in fact a set of computerized modules based on a number of systems developed by UNDTCD and elsewhere. A standardized core PSPMIS will be complemented by customized modules tailored to the requirements of each country.

When fully developed, the system should greatly improve the capability of developing country governments to plan and manage economic and social development.

# African women break career barriers

"Hallo, c'est Josette, ici Georgette; à toi."

"Hallo Georgette, c'est Josette; à toi."

Every evening around 5 o'clock, the radio waves above the dense equatorial forest of Gabon come alive with this familiar exchange. Josette, a field geologist, is back from collecting mineral samples in streams and mapping the local geology with her team of three. Her colleague Georgette is calling from Libreville to find out how everything went and to trade tidbits of information.

Cut off from the world in her jungle camp, Josette is not the only one to use this opportunity to catch up on Libreville events. Activity in all the other prospecting camps in the forest comes to a halt as everyone listens in, occasionally contributing comments to the conversation.

Josette and Georgette were hired by the Geological Survey of Gabon to help conduct the field and laboratory work required by a UN-DTCD-assisted project jointly funded by the Government and UNDP. It was launched in 1979 to assess the mineral wealth of vast zones of forest opened up by the Transgabon railroad. (see *DTCD Newsletter* Vol.2 No.2).

Both bright, career-oriented women were recruited right out of university and helped to develop the skills required in this nonconventional field for women. If not the first, they have joined the ranks of the very few women geologists in Africa.

Josette asked to participate in the mapping and sampling needed in minerals assessment, work involving camping out in the jungle for weeks at a time. The rocks to be mapped and the samples to be collected are found in stream beds and at the top of hills and mountains. Quite often, wild animals are encountered during such exploration activities and the work has traditionally been considered too difficult for women. At the same time, however, a geologist's career advancement depends precisely on this field experience.

While Josette's initial requests for such an assignment were met with skepticism by her male colleagues, her enthusiasm and persistence finally prevailed. By now, her thorough professionalism, courage and tenacity in the field are widely recognized.

Georgette, a mineralogist by training, opted for lab work, the other side of a mineral assessment. Considered quite creative in her research work, she has spent long hours examining the thousands of stream sediment samples collected by prospecting teams from all over the study area.

Her findings, along with geological and geochemical data, have provided a great deal of knowledge about the geological composition of this area and have helped in the assessment of its economic potential.

# Financial management in LDCs: priority for the 1990s

With national execution of United Nations-supported development projects coming onstream in a major way over the next few years, government financial management in least developed countries (LDCs) has become a particular concern.

## Six LDCs studied

In response to this concern, UNDTCD (Development Administration Division)has studied government financial management in six LDCs: Bangladesh, Bhutan, Malawi, Nepal, Sierra Leone and Somalia. Reviewing this research in December 1989, an Expert Group Meeting in Cyprus identified some common issues.

While noting that government financial systems in LDCs differ widely, the Meeting found that in many of these countries, inaccurate government systems fail to provide adequate data for budget formulation, budgetary control, performance monitoring, financial planning or formulation of fiscal policies.

It was found that on the one hand, recurrent budgets tend to be austere. On the other, development budgets are funded far more generously and assume the availability of local contributions, which often proves to be unrealistic. In addition, poor coordination between recurrent and development budgets is a major problem.

The Meeting found that budget review processes are handicapped by the lack of relevant information and of modern data management as well as by highly routinized procedures.

Delays by the Central Bank in providing data on the government's banking transactions in LDCs frequently complicates accounting and financial management. Moreover, in LDCs where attempted, computerization of government accounting has all too often been unsuccessful.

## Externally funded projects

A number of problems were found in the financial management of projects funded by technical assistance. These included difficulties and delays in claiming reimbursement from donors and lenders; lack of knowledge of the accountability needs of donors/lenders; collecting accounting data in countries with far-flung remote areas and poorly trained financial staff; matching changes in domestic procedures with donors' and lenders' attempts to achieve quicker disbursement of funds; the burden of diverse accountability requirements of donors and the lack of financial control over in-kind transfers.

Farm workers in Sudan, one of the 28 Least Developed Countries in Africa

It was also found that in most LDCs financial rules need to be updated and distributed more widely and training should be provided in their use. Strengthening skills at all levels of financial management was recognized as a clear priority.

## Sound investment

The Meeting concluded that upgraded government accounting systems are a precondition for better financial management. Donors and lenders who want improved accountability reports from projects were urged to invest more heavily in the accounting and financial management systems from which such reports are derived. Whatever its cost, improved financial management in LDCs was found to be cost-effective in terms of avoiding losses from weak management.

It was also suggested that at this point, weaknesses in government financial management could impede government execution of externally funded projects, at least from the financial management point of view.

## Follow-up meeting

As a follow-up to one major finding of this Meeting, the Department is organizing a Meeting on the Accounting and Auditing of External Aid Programmes in co-operation with the International Organisation of Supreme Audit Institutions (INTOSAI) in Vienna from 12-21 September 1990.

Futher information about this meeting and forthcoming publications on government financial management can be obtained from the Director, Development Administration Division, UNDTCD, One United Nations Plaza, DC-1 Room 918, New York, New York 10017 U.S.A.

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# United Nations Ground Water Software

UNDTCD support in recent years for the creative efforts of water specialists who were also computer enthusiasts in projects around the world has borne fruit.

UNDTCD (Water Resources Branch) is now finalizing a new software package which should make life much easier for ground water hydrologists and hydrogeologists throughout the developing world. The package greatly facilitates the tasks of collecting, processing and presenting hydrogeological data and provides a much more accurate assessment of ground water resources. The result is that these resources become far easier to manage and monitor.

### Two volumes

The current version of the United Nations Ground Water Software package includes 11 programmes divided into two volumes. The first volume, "Data bases and ground water utilities", contains programmes on hydraulic conductivity, ground water chemistry, pumping tests, well hydraulics and construction, hydrographs, lithography and graphics.

The second volume, "Ground water mathematical models", includes models for confined and unconfined aquifers and small islands. Another programme is for data analysis and presentation, and the last is graphics.

### Bermuda/Nepal connection

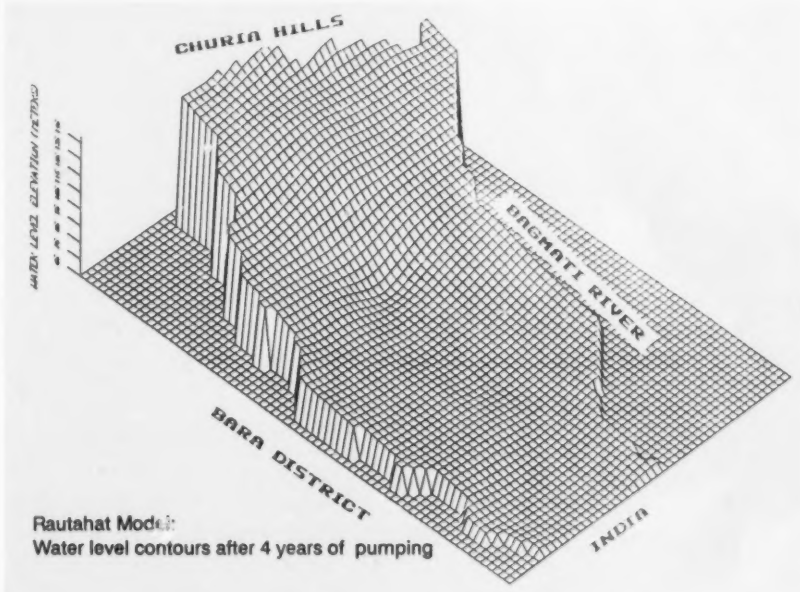
These programmes were prepared in collaboration with the Government of Bermuda under a UNDP-financed project. Very much in the spirit of technical co-operation among developing countries (TCDC), the programmes were tested, used intensively and improved under another UNDTCD-executed project in Nepal.

New versions of this software will most likely integrate other work under UNDTCD-executed projects, such as a ground water data base being developed in French in Mali, a similar one in English in Malawi, and ground water simulation models being created and tested in India and Niger.

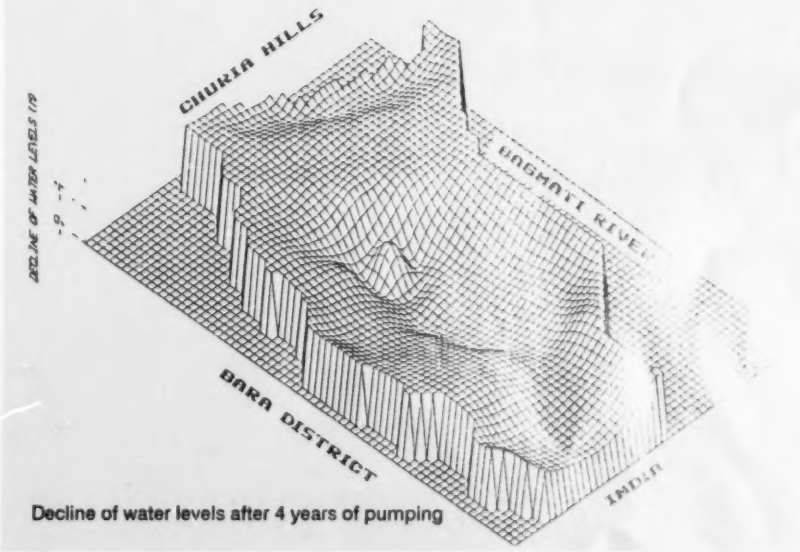
### Training

Funds from the United Nations Regular Programme are being used to provide training through the use of this new water resources management tool. It is expected that interregional and international workshops will be set up for [illegible] purposes and UNDTCD technical advisers will [illegible] training while on mission.

The United Nations Ground Water Software [illegible] tailored to developing countries [illegible] third quarter of 1990. [illegible] public domain and available in English, French and Spanish.




Rautahat Model:
Water level contours after 4 years of pumping




Decline of water levels after 4 years of pumping

[From Myanmar on page 1]

To date, 375 persons from 22 different government offices have received basic training locally in computer management and operations. Fellowships for study abroad provided advanced training in computer services to 12 trainees who have returned to critical positions to manage and operate computer facilities. Another 11 people received fellowships for study abroad in computer applications in economic and social statistics, planning, national income accounting and management information systems. In addition, two study tours were organized to expose senior government officials to computerized management and decision support systems used in other countries.

The project has also developed a sizeable quantity of software for the Ministry of Planning and Finance. Most of it is for record keeping and statistical applications, including statistical tabulation and reporting, insurance, banking, project monitoring, payroll and financial and economic analysis. A national socio-economic data base is now being set up to support statistical analysis, economic modelling and other planning functions. Finally, a computer network has been established in Yangon which connects 40 microcomputers to the mainframe system in a star typology.

# Customized expertise for Algerian minerals research

Through a government executed project in Algeria, UNDTCD is providing tailored and sophisticated technical assistance to meet very specific minerals sector research needs.

Algeria has a largely untapped mineral potential. An impressive number of mineral prospects and occurrences have been identified in easily accesible areas and therefore can be readily tested. The development of these resources has become a national economic priority.

Algeria's National Enterprise for Mineral Research (EREM) contributes to national mineral policy formulation and is entrusted with the exploration of non-fuel mineral resources. Some 320 professionals out of a work force of 3000 carry out over 45 projects ranging from mineral inventory to ore reserves evaluation for metallic, non-metallic and precious metals. Also a service-oriented enterprise, EREM has set up one of the most complete and sophisticated pilot plants in the world for ore treatment and beneficiation operations.

In light of UNDTCD access to worldwide expertise and its successful exploration record, its assistance was requested to improve EREM's mineral exploration programmes, especially in relation to decision-making capabilities.

An EREM exploration priority is the assessment of the economic potential of the lead-zinc province in northeastern Algeria. In regard to this, UNDTCD is recruiting consultants who will work with Algerian staff to compile and assess available geological and mining data and to identify, select and investigate mineral prospects in terms of economic feasibility.

In addition, experts with international exposure in sulphur, gold and diamond exploration will help national teams upgrade research methods to ensure cost effective evaluation of mineral occurrences.

Finally, consultants will assist EREM's efforts to strengthen its institutional base. UNDTCD will also train national teams now computerizing the exploration geochemistry and geophysics departments.

The project is also providing a limited but specific input to the Algerian Geological Survey through the transfer of expertise to speed up the installation of an ambitious computerized geological data bank and to tailor it to Algeria's needs. This work is being entirely financed by the government.

Training is a key component of the project, with emphasis on local workshops to study and evaluate specific national mineral exploration case histories. In addition, several study tours are being organized in North America to familiarize EREM and Geological Survey decision-makers with mineral resources planning and management in countries with dynamic mining sectors.

# China explores paths to cleaner air

A project to help China develop policies to address environmental problems from coal combustion is being formulated by the Energy Branch of UNDTCD. The first of its kind in the developing world, the project is designed to develop tools, including original and appropriate new Chinese computer programmes, which can help planners and decision-makers assess the quantitative relationship between growth of coal combustion and environmental degradation. It will also propose measures to prevent and control air pollution and acid rain caused by direct coal burning.

Pollution due to coal combustion is a major problem for China. The country relies on coal for over 76 per cent of its energy requirements and only about 17 per cent of the one billion tons of coal China burns each year is washed. In 1985, average daily air samples taken from 50 out of 55 major cities in China failed to pass even the Government's "secondary" standards (not exceeding 300 microgrammes of particulates per cubic meter). The marked increase in recent years of diseases related to the respiratory system and of cancer has been linked to increasing coal consumption in major urban centres. In addition, over 6.6 million acres of farmlands in China are contaminated by acid rain.

The three year project envisages data collection, research, technology selection and introduction, training, computer software development and policy analysis efforts in collaboration with the State Planning Commission, Beijing University and the China General Coal Company. To ascertain the optimal energy mix to meet economic development needs without harming the environment, three cities with diverse characteristics are to be used as case studies. The expertise gained from work on these cities can later be applied to others.

Datong City is located in the Datong Basin in northern Shanxi Province, where some 60 million tons of coal are produced annually. With highly developed machine manufacturing and construction materials industries, Datong City has air pollution which rates among the worst in China.

At top, recent photo of Beijing in the early morning, before pollution has set in. Below, same spot at dusk.

Qindao City is an important coastal harbor surrounded by the sea on three sides. A major center of industry and tourism, its major source of fuel is coal, most of which has a sulfur content of nearly three per cent. The concentration of sulphur dioxide in the air of Qindao City is the highest in North China and the second highest in the nation.

Finally, Shenzhen City, which lies across from Hong Kong, is the most important Special Economic Zone in China. In recent years it has become a major industrial city and it may become one of China's largest harbors. At the moment it has a diversified energy structure with petrols as a major source and its air quality is still good. However, a 600 MW coal-fired thermal power plant to be built in 1991/92 could have a serious impact on urban air quality.

The project is being formulated in collaboration with the China International Center for Economic and Technical Exchanges and the Chinese Research Academy of Environmental Science (CRAES), established in 1980 by the China National Environmental Protection Agency as the national center for environmental data, research and analysis.

In addition to this project, UNDTCD and the Beijing Scientific and Technical Exchange Center with Foreign Countries are organizing an interregional seminar on environmental problems at all stages of energy production, transporation and utilization to be held in May 1991.

# New publications

## Ground water development and management: a quarter century of work

At the 28th International Geological Congress held in Washington D.C.in July 1989, UN-DTCD issued **Ground Water Development and Management in Developing Countries: 25 Years of United Nations Activities, 1963-1988** (Sales no.: W.89.II.A.8). This 36-page publication provides an overview of a programme which has included the execution of 180 projects in over 90 countries, ranging from the small island countries of the Caribbean to the large countries of the Asian continent.

The activities described include ground water resources surveys and assessement; major well drilling and digging programmes for rural water supply purposes, mainly in drought-prone areas of Africa; training of ground water technicians and engineers including drillers and geophysicists; transfer of technology in geophysical exploration systems analysis, artificial recharge and other areas; preparation of hydrogeological and ground water resource maps and improved ground water resources management through use of mathematical models.

In addition, advisory services to practically all developing countries were provided by a staff of five senior ground water specialists and study tours and seminars/workshops and symposia were carried out in Europe (Sweden, Yugoslavia, Spain), the Middle East (Turkey), the Caribbean, Asia (China and India) and the Pacific (Fiji).

The present status of knowledge of ground water resources potential and development is described in eight volumes totalling some 2500 pages and many illustrations, published in the Natural Resources/Water Series under the authorship of the Department of Technical Co-operation for Development.

At the present time, more than 30 projects with a ground water component are under execution by UN-DTCD. A publication describing the most significant advances in ground water technologies of the last decade is being prepared.

## State enterprises and investment policies: minerals sector perspective

Foreign investment, mobilization of national entrepreneurship, restructuring and privatizating state enterprises are issues currently being widely discussed in the mineral sector of developing countries, which is often their main source of foreign exchange and government revenues. These issues are addressed by two recent UN-DTCD publications.

**The Role of State Enterprises in the Solid Minerals Industry in Developing Countries** covers the proceedings of an international conference convened by UNDTCD and the government of Hungary in 1987 in Budapest. The conference was attended by chief executives of many state mining companies, representatives from private industry, international and national development banks, investment banks and from the ministries of mines and energy.

They discussed issues relating to restructuring of state enterprises, relations with multinational mining companies and supervisory authorities such as ministries of mines, economy and planning.

To date, the technical papers of this conference constitute the most comprehensive and practical coverage of the challenges faced by the state enterprises in the mining industry in developing countries.

The second publication, **Mining Policies and Planning in Developing Countries**, is based on presentations made at a conference in Buenos Aires attended by chief executives of state mining companies, officials from ministries of mines and energy, and representatives from private firms, international and national development banks and investment banks.

It covers issues such as government versus private ownership, mineral planning, legislation and investment policies, financing of mining projects, the implications of the debt crisis for mineral producing countries and case studies of Indonesia, Argentina and Botswana.

A limited number of these two publications (in English) are available from the Director, Natural Resources and Energy Division, UNDTCD, One UN Plaza, Room DC1-818, United Nations, New York, New York 10017.

## Update: Interregional workshops/seminars

**5-9 November, Zimbabwe**
Improving revenue administration

**5-11 November, China**
National disability machinery

**13-21 November, Malta**
Computerization of government accounting

**26 Nov.-7 Dec., Morocco**
Computerized mineral title management and associated databases

**3-7 December, Venezuela**
Mobilization of resources for optimal water development, allocation and conservation

To our readers: Your contributions, letters and views are welcome.
Correspondence should be addressed to: *DTCD Newsletter*, Room DC1-1254, New York, NY 10017.